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*Contracting with a quiet life manager*

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JEL Classification numbers: L26, M14, D86

Keywords: Quiet-life bias, Corporate Governance, Moral Hazard.



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# Contracting with a quiet-life manager

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## Abstract

The aim of this paper is to analyze how employees may affect firm's corporate governance. In particular, we analyze a shareholder-manager relationship through a principal-agent framework. The manager is the agent in charge of taking decisions for firm's success. Yet, when deciding, the manager takes into account employees' preferences, i.e. the manager wants to enjoy a "quiet life". Our result highlight that having a quiet-life manager is not necessarily linked to destroy value, as suggested in recent research. It might even recover part of the efficient decisions (at a cost borne by the shareholder).

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## 1 Introduction

Corporate governance has been traditionally studied from the perspective of the existing conflict between firm's owners (shareholders) and who runs the firm (the manager).<sup>1</sup> The main concern of the shareholder is, then, how to provide the manager with enough incentives and/or how to monitor manager's activities to induce him to select the right decision (from shareholder's point of view), since otherwise, the manager would pursue his own interests which are typically assumed to be inefficient. However, which is the

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<sup>1</sup>Shleiffer and Vishny (1997) states that Corporate Governance deals with the ways in which suppliers of finance to corporations assures themselves of getting a return on their investment. This classical definition includes not only shareholders but also creditors. Since by law shareholders are less protected than creditors, the main concern to analyze turns into the manager-shareholder relationship.

personal goal that a manager might follow as well as the departures that it imposes from shareholder's objectives has to be defined. Several theories aim at explaining such departure. Perk consumption has been highlighted as one of the main motivation that a manager might follow, for example in the seminal papers of Jensen and Meckling (1976) or Fama and Jensen (1983) to name just a few. An alternative departure behavior is known as the empire-building motivation where it is assumed that the size of the private benefits that a manager may enjoy increases with the size of the firm (the larger the firm, the larger the opportunities to extract resources). Nonetheless, recent research proposes an alternative managerial bias aiming at explain which is the goal that departs manager from shareholder's maximization value. Bertrand and Mullainathan (2003) empirically shows that when a manager is insulated from takeovers, workers wages rise as well as the creation of new plants or the destruction of old plants falls. The authors suggest that avoiding conflict with employees appears to be a potential reason that can explain manager's behavior when taking decisions. Therefore, in order to have a better understanding of corporate governance, it is necessary not to restrict the problem just to a conflict between managers and shareholders. Even if this is the main conflict on corporate governance enlarging our view by including other members of the firm, i.e. the stakeholders, may help to have a more complete figure of the analysis.<sup>2</sup> In this line, for instance, Pagano and Volpin (2005) or Cespa and Cestone (2004) analyze how a manager can set informal contracts with different stakeholders as a mechanism to entrench his position in the firm, i.e., avoiding hostile takeovers. In Pagano and Volpin (2005), the authors claim that manager and employees are "natural allies" against new acquires. The manager tends to offer a lax employment policy as a mechanism to reduce the likelihood of being under an hostile takeover. The main effect is driven because the manager wants to enjoy a "quiet-life", i.e. the manager is not willing to monitor employees since he does not internalize the costs from not doing it. In Cespa and Cestone (2004), the authors show that the manager is able to set informal contract with stakeholders different than employees as a mechanism to entrench his position at the firm. Differently from Pagano and Volpin (2005), they show that when this implicit agreements are made explicit, the

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<sup>2</sup>There has been a recent debate towards the role of the stakeholder society in economics. By stakeholder we refer to any participant of the firm apart from shareholders, that is to say, employees, suppliers, customers or local community. Several authors like Tirole (2001) or Allen and Gale (2002) appoints the need to include in the analysis the role played by stakeholders.

ability of the manager to increase his discretion (to entrench his position) is no longer possible. Hence, these authors suggest that shareholder may have a selfish interest in promoting a stakeholder society. This last effect is possible since the authors assume that both the shareholders and stakeholders may have congruence of interests. Our paper follows this strand of research by considering that managers want to enjoy a "quiet-life" in the firm. We differ from Pagano and Volpin (2005) and Cespa and Cestone (2004) since we do not consider how this informal relations within different members of the firm may affect the market for corporate control. Instead we are concerned in analyzing how this behavior may affect firm's internal decisions. We consider that the manager has discretion on the selection of the firm's strategy and also the implementation of it (that is to say, the board is rubber-stamping). It is important to remark that, differently from the papers mentioned above, we do not model explicitly employees' behavior. We model the shareholder-manager relationship by means of a principal-agent model where the manager is aligned, up to some degree, with employees' preferences. In particular, we assume that the production process takes place in two stages. First of all, the manager chooses the firm's strategy (where does the firm want to go?).<sup>3</sup> We assume that the manager has the discretion to choose only among two possible strategies: one alternative provides higher growth opportunities although it is riskier. Once the project is selected, the manager undertakes the level of effort (day by day decisions) enhancing firm's value. An important element of our model is that the choice of the firm's strategy by the manager in the first stage has an effect not only on the level of risk borne by the firm but also on the manager's cost of effort. In other words, if the manager opts for the strategy that employees would like to be chosen, then managing the firm is less costly vis-a-vis the alternative strategy. To be precise, if employees would be able to choose among both strategies, they chose the most safety strategy available and they will make the firm easy to run in this case.

<sup>4</sup> Our results shows that having a quiet-life manager might not be directly related with

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<sup>3</sup>We take the terminology of firm's strategy from Perotti and Von Thadden (2006). Similar to them, by firm's strategy we refer to the choice between two disjoint projects. Since it has no link with interaction we will focus during the model with the concept of project.

<sup>4</sup>In particular, Faleye et al. (2005) finds out that if employees are paid through an ESOP (Employee Stock Option Plan), the firm typically tend to select less risky projects. In Aoki (1988) it is shown that a diversification policy may become the outcome from a cooperative agreement between managers and employees (as a policy that let the firm reduce risk in their activities).

an inefficient outcome, as proposed by Pagano and Volpin (2005). On the contrary, if the manager has discretion not only about the level of effort but also about the choice of the firm's strategy, we find out that there may be cases where the manager choose more often the efficient strategy concerning a situation where the manager only controls the level of effort. There exist two effects driving this result. The first effect concerns the assumption on manager's preferences for a quiet-life since this will tend to favour employees' preferred project. The second effect relies on how important is the risk-taking vis-a-vis the quiet-life effect. If risk-taking is not very important relative to the quiet-life behavior, having a quiet-life manager partially solves inefficient decision taking regarding the choice of the project. Recovering efficient decisions is borne by the shareholders since profits are lower in comparison with the case where they can contract upon the firm's strategy. Yet, if risk-taking is huge enough, this result is no longer true and a quiet-life manager implies that the manager selects inefficient project for more combination of parameters. Summing up, the role of a quite-life manager has been considered as an inefficient behavior, as suggested by Pagano and Volpin (2005). Our results claim that this is not necessarily true since this bias may help to recover efficiency of the firm's strategy (at a cost borne by shareholders). Hence, we expect to enrich the debate around corporate governance reforms, since improving shareholder's protection might come not only at a cost for managers but also inefficient decision taking. The paper is organized as follows. In Section 2, the model is presented. We determine the optimal contract under symmetric and asymmetric information in Section 3. We study the optimal contract when the manager has discretion over one decision (the level of effort) or both (the level of effort and the choice of the project) and compare the optimal decisions under asymmetric information with the efficient decisions (or decisions taken under symmetric information). Section 5 concludes and presents future research. All proofs are included in an Appendix.

## 2 Model

Consider the following economic situation described in figure 1. Initially, a shareholder (the firm's owner) offers a contract to a manager. If the manager accepts, he runs the firm. We assume that the shareholder do not have the time or they lack the experience to run the firm, fact that explains why the firm is run by a manager.

The manager is hired in order to take decisions for enhancing shareholder's value. Yet, we consider that the managerial decisions or the production process takes place in two different steps. Firstly, the manager chooses which is the project to select (the firm's strategy following Perotti and Von thadden terminology). Roughly speaking, that decision regards the level of risk the company is willing to cope. We will denote this decision by  $P$ . Secondly, the second decision is related with the expected value of the firm. That is to say, once the project is chosen, the manager takes decisions in order to enhance the value of the firm, i.e. "day by day" decisions. We will denote this decision by  $e$ .

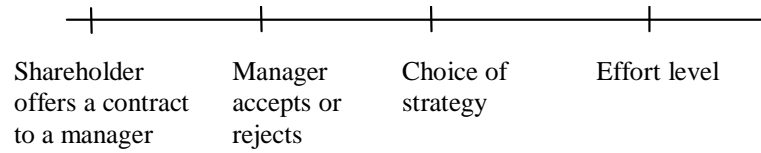


Figure 1: Timeline of the model

## 2.1 Choice of project and effort

The manager must select which is the firm's project. We simplify the choice of the project by allowing him to choose only among two possible alternatives. The former will be called "safe" and the latter "risky". Roughly speaking, a safe project reduces, in relative terms, the riskiness of the company although it has also a lower expected value of the firm.

For the sake of simplicity, at the stage 3 the manager must choose among the following two alternatives  $P \in \{R, S\}$ . Therefore, given  $P$  the expected firm's value is:

$$y_P = e_P - r d_P + \epsilon_P$$

where  $\epsilon_P \sim N(0, \sigma_P)$   $P \in \{R, S\}$  where and  $e_P$  is the effort implemented by the manager once the project is already chosen. Hence, given the same level of effort, choosing safe implies a lower expected value for the firm, although it is less risky. Formally,  $d_S = 1 > d_R = 0$  and  $\sigma_S < \sigma_R$ .<sup>5</sup> We assume that the manager has to choose one project or the other

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<sup>5</sup>Obviously, we consider that the choice of the strategy only affects the mean and the variance of the company. We are aware that the riskiness of the company (any random variable) might include other higher moments. However, we only stare at these first two moments because we work with errors normally distributed.

project, but we do not allow for a combination of both. This can be justified because the firm need a fix or even a sunk investment. Finally, we assume that the effort cannot be verified by the shareholder.

We interpret  $r$  as the opportunity cost of reducing the riskiness of the company. For instance, the manager may decide to diversify firm's activities. Obviously, diversifying does not necessarily lead to a destruction of the expected value of the company. Yet, the shareholder can diversify their investments at least as good as the manager through the capital market and not through the firm. We can also interpret both projects by considering that the "risky" project offers better growth opportunities, i.e. investing in new emerging markets while "safe" means reinvesting in your own country.

## 2.2 Economic agents

As commented previously, the owners are risk neutral while the manager is risk averse. Thus, the shareholder's utility function depends only on the expected value of the firm. that is to say,

$$U_S = E(\text{profits})$$

which in turn imply that shareholder's profits depends on the the choice of the project. For instance, given the same level of effort, a risk neutral shareholder would prefer to choose "risky".

The manager's decisions over firm's project is the key point in this model. We assume that the choice of the project will have an effect not only on the riskiness of the company but also on the cost of managing human resources. Following Bertrand and Mullainathan (2003), or Jensen (1986) we consider that the manager's decisions tend to be biased towards employees' preferences. This implies that the manager has a tendency to choose the most preferred project from the employee's point of view. As commented in the introduction, we assume that, among the available projects, employees would like to

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We are aware that  $d_S = 1 > d_R = 0$  is not without loss of generality. Therefore, the interpretation includes not only the quiet life behavior but also the dimension of the decision.

choose the safest one.<sup>6</sup> Thus, the manager's utility function takes the following form:

$$U_m(W, e) = u(W) - \frac{v(e_P)}{1 + ad_P} \text{ where } P \in \{S, R\}$$

where we separate income from effort just for simplicity and  $a > 0$ .<sup>7</sup> The parameter  $a$  reflects the save on costs that the manager may achieve if the choice of the project coincides with employees' preferences, that is to say, the parameter reflects how important the "quiet-life" behavior is in the manager's decision taking. A plausible interpretation of differences in the cost may be found in the institutional framework: different institutional frameworks regarding labour market would reflect different values of  $a$ .<sup>8</sup> Therefore, we consider that the choice of the project has an implication on the level of effort that can be achieved.

Finally, we assume, for the sake of simplicity, that manager's preferences are of a CARA type. Therefore, we may express the utility function of the manager through its certainty equivalent.<sup>9</sup> Thus, we restrict attention to linear contracts, i.e. contracts of the form  $W = \alpha + \beta(y_P)$  where  $\alpha$  is a fix payment independent of the outcome and  $\beta$  depends on the firm's performance. Thus, we can rewrite the manager's utility function in the following way

$$CE_P = \alpha + \beta E(y_P) - \frac{\rho}{2} \beta^2 \sigma_P^2 - \frac{v(e)}{1 + ad_P}$$

where  $P \in \{S, R\}$  and  $\rho$  is the Arrow-Pratt risk aversion coefficient and we consider, just for simplicity, the following quadratic manager's cost of effort,  $v(e) = \frac{e^2}{2}$ . For instance, we can rewrite manager's certainty equivalent depending on the project selected. We can observe how the selection of the project has an effect both on the risk-taking and on the

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<sup>6</sup>It is important to highlight that we do not model employees behavior. We model a Shareholder-Manager relationship where employees affect, up to some degree, manager's decisions. Regarding employees' preferences Morck et al. (2002) empirically finds that if employees are paid through an ESOP, the firm invests in less risky projects.

<sup>7</sup>We are aware that this simplification is not without loss of generality. Therefore, the interpretation includes both the quiet life behavior but also the dimension of the decision.

<sup>8</sup>Botero et al (2004) survey the different institutional frameworks around the world. It is remarkable the differences between the US or UK versus continental Europe.

<sup>9</sup>See for instance Holmstrom and Milgrom (87) for the optimality of linear contracts.



manager's cost of effort,

$$CE_R = \alpha + \beta e_R - \frac{\rho}{2} \beta^2 \sigma_R^2 - \frac{e_R^2}{2}$$

$$CE_S = \alpha + \beta(e_S - r) - \frac{\rho}{2} \beta^2 \sigma_S^2 - \frac{e_S^2}{2(1+a)}$$

### 3 Optimal contract with a "quiet-life" manager

#### 3.1 Symmetric information or efficient decisions

For the sake of comparison, let us analyze which is the efficient policy that the firm's owner should adopt in this framework. Consider, initially, that both the project and the level of effort are verifiable variables. Therefore, the owner of the company can write both in a contract enforceable by the Court of Law. The optimal payment scheme and level of effort are the solution to maximize the shareholder's wealth given that the manager accepts the contract. Formally, for  $P \in \{S, R\}$

$$\underset{\{\alpha, \beta, e\}}{Max} B_P = (1 - \beta)E(y_P) - \alpha$$

$$s.t. \quad CE_P \geq \underline{U}$$

where  $\underline{U}$  represents the manager's reservation utility. Since the effort is verifiable and the manager is risk averse while the shareholder is risk neutral, she offers a fix salary to the manager ( $\beta = 0$ ) in order to compensate him for the level of effort while she bears all the risk. The efficient level of effort is obtained by equating the marginal value of the project with the marginal cost of the manager's effort, i.e.  $v'(e) = e = 1 + ad_P$  for  $P \in \{S, R\}$ . This means that the optimal level of effort that the shareholder can demand is, up to some extent, constrained (or enhanced) by the employees' influence: a higher manager's effort can be demanded whenever employees' preferences are respected. As a result, the shareholder must balance between a higher level of effort from choosing the safe project and a higher expected value if the risky project is chosen. Formally, the level of profits obtained from the choice of the project are

$$B_P = \frac{1}{2} + d_P(a - 2r) \quad P \in \{S, R\}$$

It is important to highlight that the shareholder is risk neutral, and therefore the optimal choice of the project and effort does not depend on the level of risk. It, then, depends

only on how employees may affect to the firm's management compared to the differences on profits from choosing one project or the other. In particular, if  $r > \frac{a}{2}$  the shareholder will implement the risky project while the safe project is preferred whenever the opposite is true.

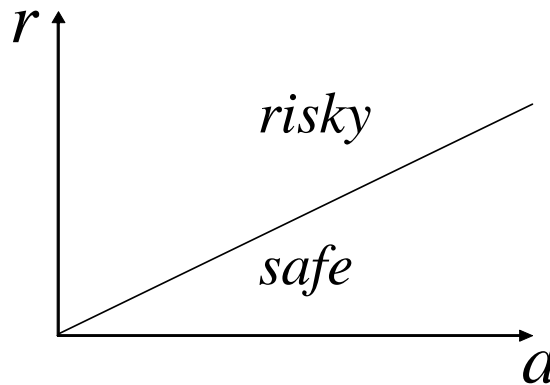


Figure 1: Optimal decisions regarding the choice of the strategy under symmetric information

## 3.2 Asymmetric information

In this section we would like to focus on the role played by the discretion that a "quiet-life" manager enjoy when deciding both on the choice of the project as well as the level of effort. If the manager has discretion over the level of effort the shareholder will have the need to provide incentives so as to reduce the moral hazard behavior. Yet, this optimal payment scheme under moral hazard has real effect on shareholder's decision upon the choice of the firm's project by distorting them. Nevertheless, if the manager has also discretion concerning firm's project, it may be the case that some of the efficiency is recovered.

### 3.2.1 Asymmetric information: effort is not contractible

We consider instructive to present the case where the manager's effort is not verifiable whereas the choice of the project is still verifiable. By analyzing this case, we observe that the level of effort is distorted due to the manager's risk aversion. Moreover, we can observe how the moral hazard on effort generates distortions on firm's project even if the shareholder can contract on such decision.

If the manager has discretion about the level of effort, he will choose the level that maximizes his utility, i.e.  $e_R \in \arg \max C E_R(\alpha, \beta)$ . Yet, as we can note, this decision depends not only on the level of incentives provided by the shareholder but also on the shareholder's choice of the project. If the shareholder finds worthy to implement the "risky project". the level of incentives solve

$$e_R \in \arg \max(\alpha + \beta e - \frac{\rho}{2} \beta^2 \sigma_R^2 - \frac{e^2}{2}) \iff e_R = \beta \quad (ICC_e \text{ when } R)$$

that is to say, if the shareholder wants to implement a larger level of effort she must propose a higher powered incentive scheme. Differently, if the shareholder would find optimal to implement the safe project, the managerial incentives to exert effort are modified since the manager find less costly to implement this project. Formally,

$$e_S \in \arg \max(\alpha + \beta e - \frac{\rho}{2} \beta^2 \sigma_S^2 - \frac{e^2}{2(1+a)}) \iff e_S = (1+a)\beta \quad (ICC_e \text{ when } S)$$

highlighting the role of employees when a shareholder is contracting with a quiet-life manager.

Therefore, the shareholder chooses the payment scheme anticipating this behavior in order to maximize expected profits given that the manager accepts the contract as well as she provides incentives to exert effort. If the shareholder wants to implement the risky project, she looks for an optimal payment scheme and an induced level of effort solving

$$\begin{aligned} \underset{\{\alpha, \beta, e\}}{Max} B_R &= (1 - \beta)e_R - \alpha \\ s.t \quad & (PC_R), (ICC_e \text{ when } R) \end{aligned}$$

The solution to this program follows the classical trade-off regarding providing incentives with a risk-averse agent. That is to say, since effort is non-verifiable, the shareholder optimally links compensation to the only source of available information (given that the outcome, this piece of information, is a noisy signal of manager's effort). Yet, providing incentives is costly since the manager is a risk-averse agent, which in turn implies that the shareholder must pay a higher expected salary in order to let the manager accept the contract. As a result, the optimal level of effort induced by the payment scheme is lower than the efficient case (as well as the level of profits).

In a similar way, we can replay the exercise when the shareholder would prefer to implement the safe project. Choosing safe has both advantages and disadvantages. On the

one hand, implementing "safe" induces a lower cost of management of human resources, measured by  $a$  and, on the other hand choosing safe has a lower expected value, which is measured by  $r$ . Formally,

$$\begin{aligned} \underset{\{\alpha, \beta, e\}}{\text{Max}} B_S &= (1 - \beta)(e_S - r) - \alpha \\ \text{s.t. } & (PC_S), (ICC_e \text{ when } S) \end{aligned}$$

As already mentioned, when "safe" is selected the level of effort depends on the "quiet-life" behavior and on the incentives provided through the mechanism scheme. Eventually, the optimal level of incentives depends on the quiet life behavior, as well. Hence, let us summarize the optimal contract in the following Lemma,

**Lemma 1** *The optimal contract  $\{\alpha, \beta, e\}$  when effort is non-verifiable displays the following characteristics:*

- (a) If "risky" is chosen  $e_R = \beta_R^* = \frac{1}{1+\rho\sigma_R^2}$  and  $B_R = \frac{\beta_R}{2}$ ,
  - (b) if "safe" is chosen  $e_S = \beta_S(1+a)$ ,  $\beta_S = \frac{1+a}{1+a+\rho\sigma_S^2}$ , and  $B_S = \frac{\beta_S(1+a)}{2} - r$ ,
- and in both cases  $\alpha_P$  is determined by  $CE_P = \underline{U}$  for  $P \in \{S, R\}$ .

Therefore, the shareholder decides which is the optimal choice of the project by comparing the level of profits when implementing the optimal payment scheme. Let us define the threshold  $r_1 = \frac{1}{2} \left\{ \frac{(1+a)^2}{1+a+\rho\sigma_S^2} - \frac{1}{1+\rho\sigma_R^2} \right\}$  as the combination of parameters where the shareholder is indifferent between implementing "risky" or "safe". Intuitively, the shareholder will choose to implement "risky" if the opportunity cost from choosing "safe" are large enough while "safe" should be selected if the opposite happens.

**Proposition 1** *When a quiet-life manager has discretion on the choice of effort, the shareholder implements the risky project if  $r > r_1$  while the safe project is implemented if the opposite takes place.*

Thus, given the threshold  $r_1$  we identify which kind of distortions regarding project's choice are expected derived from the lack of verifiability on manager's effort.

**Proposition 2** *Moral hazard over effort generates distortions over firm's project and these distortions are shaped by differences over risk between both projects. To be precise:*

- (a) If these differences are large enough ( $\Delta\sigma^2 \geq \rho\sigma_S^2\sigma_R^2$ ), the shareholder implements

"safe" in some situations where "risky" was efficient.

(b) If differences are not large enough ( $\Delta\sigma^2 < \rho\sigma_S^2\sigma_R^2$ ), the shareholder's distortions depends on the quiet-life behavior:

b.1) for low values of a quiet life behavior, i.e.  $a < \frac{\Delta\sigma^2}{\rho\sigma_S^2\sigma_R^2 - \Delta\sigma^2}$ , she chooses to implement "safe" when "risky" is efficient. This distortion takes place for a low opportunity cost (low  $r$ ).

b.2) for high values of a quiet life behavior, i.e.  $a > \frac{\Delta\sigma^2}{\rho\sigma_S^2\sigma_R^2 - \Delta\sigma^2}$ , she chooses to implement while for high values "risky" is chosen when "safe" is efficient. This distortion occurs for a high opportunity cost (high  $r$ ).

where  $\Delta\sigma^2 \equiv \sigma_R^2 - \sigma_S^2$ .

Our first result states that distortions compared to the efficient decisions are obtained around the efficient threshold ( $r = \frac{a}{2}$ ). In other words, if the opportunity cost is really high the shareholder will select "risky" independently of the moral hazard behavior. Similarly, if the concerns about employees are huge enough, that is to say, the quiet-life behavior is important then we should observe "safe" as the optimal decision regardless of the opportunity cost. In both cases, we do not have a conflict between efficient and optimal decisions.

Yet, in the other cases, we have distortions on the shareholder's selection of the firm's project. In these cases, shareholder's decisions not only depend on the relationship between a lower cost of managing human resources and a lower profitability but also on the manager's attitude towards risk. In particular, part (a) of proposition 1 shows that if the differences over risk between both projects are large enough, the shareholder finds optimal to implement safe in situations where risky is efficient. The reason is that the manager is risk averse and in case the shareholder would want to implement risky she should compensate the manager for that risk taking. Hence, the larger the differences in variances, the larger the potential save in wages, and eventually the shareholder implements the safe project.

Instead, part (b) of proposition 1 states that if these differences are not large enough, shareholder's distortions may be of two types. If the value of the quiet life behavior is not very large, the main effect that dominates is still the save on wages through risk-taking. Yet, if the value of the quiet-life behavior is large enough, shareholder's distortion concerning efficient decisions depends on the relationship between having a lower managerial

cost (high  $a$ ) and a lower profitability (high  $r$ ). In this case, the loss on profitability dominates the save on wages, which in turn imply that the shareholder implements risky when safe is the efficient decision.

Let us represent these effects graphically. In the first picture, we describe part (a) of proposition 1 while part (b) is described in the second picture. The black line represents the threshold in which the shareholder is indifferent between implementing  $P = R$  or  $P = S$  when effort is non-verifiable. Similarly, the dotted line represents the indifference line between implementing safe or risky when effort is contractible (symmetric information case).

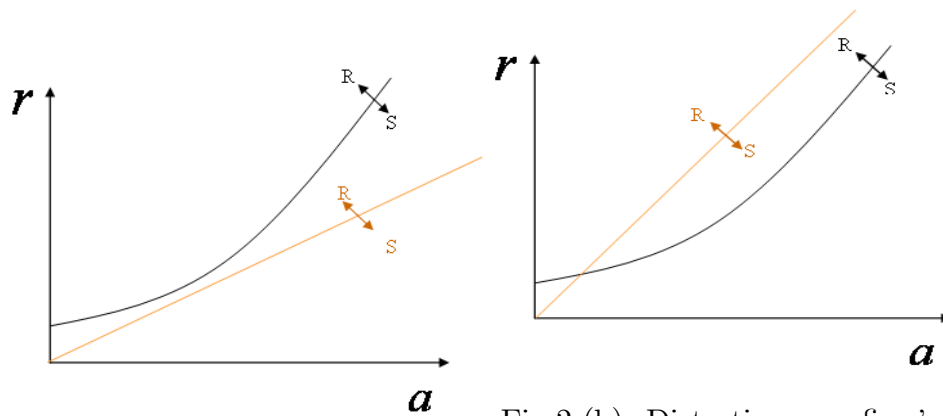


Fig 2 (a): Distortion over firm's strategy when the difference of variances between projects is large.

Fig 2 (b): Distortion over firm's strategy when the difference of variances between projects is small.

### 3.2.2 Asymmetric information: both effort and project are not contractible

The lack of verifiability of manager's decisions imply that the shareholder must offer a contract depending only on the outcome  $y_P$ ,  $P \in \{S, R\}$ , since it is the only verifiable source of information. Recall that the choice of the manager's effort depend not only on the incentives provided by the shareholder but also on the choice of project. Yet, the shareholder cannot contract on such decision. This implies that the payment scheme, in particular  $\beta$ , is the only mechanism available for the shareholder to induce the manager to select the right actions.

Thus, given that level of effort, the manager will choose the risky project if he finds

worth to do it, i.e., she will offer a payment scheme such that the manager prefers to implement the risky project. Formally,  $P = R$  will be chosen if

$$CE_R \geq CE_S$$

$$\alpha + \beta e_R - \frac{\rho}{2} \beta^2 \sigma_R^2 - \frac{e_R^2}{2} \geq \alpha + \beta(e_S - r) - \frac{\rho}{2} \beta^2 \sigma_S^2 - \frac{e_S^2}{2(1+a)},$$

and taking into account the level of effort derived previously, we get

$$\beta r \geq \frac{\beta^2}{2}(a + \rho \Delta \sigma^2) \quad (ICC_{P=R})$$

In words, the manager will choose the risky project if the costs from adopting "risky" are lower than the costs from adopting "safe". The LHS of the last equation represents the costs from adopting the safe project. The safe project reduce the expected value of the firm by  $r$ , which is partially internalized through the payment scheme ( $\beta$ ). The RHS of the equation represents the cost from adopting the risky project. The choice of the risky project suppose two different costs for the manager: he must bear a higher level of risk as well as a larger cost of managing human resources. Therefore, if the shareholder wants to implement risky by providing optimal incentives, she offers an optimal payment scheme  $\{\alpha, \beta\}$  that maximizes her expected profits given that the manager accepts the contract and he has incentives to select the right effort and risky project. Formally,

$$\begin{aligned} & \underset{\{\alpha, \beta\}}{Max} ((1 - \beta)e_R - \alpha) \\ & s.t. CE \geq \underline{U}, (ICC_{e \text{ when } R}), (ICC_{d=R}) \end{aligned}$$

Let us fix the value of the "quiet-life" parameter in order to get the intuition of the solution to the shareholder's problem. If the opportunity cost of choosing safe is high enough (a high  $r$ ), the manager has the tendency to choose "risky" since he internalizes part of this cost (through  $\beta$ ). Therefore, the shareholder selects the level of incentives, i.e.  $\beta$ , as the mechanism that induces the manager to select the right effort: the shareholder selects the same incentives to the case where firm's project is verifiable. Instead, if the opportunity cost of switching from risky to safe is small (low  $r$ ) the shareholder cannot choose the same incentive scheme since in this case the manager would change to "safe". Hence, the shareholder optimally lowers the incentive mechanism. By lowering the incentives and linking them positively to the opportunity cost and negatively to the quiet-life behavior,

the manager finds optimal to implement risky.<sup>10</sup>

In order to determine the optimal decision, we need to do the same exercise by analyzing which is the optimal contract that the shareholder should offer if she wants to implement "safe". Formally, the shareholder should solve the following program

$$\begin{aligned} & \underset{\{\alpha, \beta\}}{Max} ((1 - \beta)(e_S - rd_S) - \alpha) \\ & st \ CE_S \geq \underline{U}, \ (ICC_{e \text{ when } S}), \ \beta r \leq \frac{\beta^2}{2}(a + \rho\Delta\sigma^2) \end{aligned}$$

Yet, the solution to this problem is very similar to the previous one. Let us fix quiet-life behavior to obtain the intuition of the shareholder's program, as we did in the previous program. If the opportunity cost of choosing safe instead of risky (i.e.,  $r$ ) is not very high, the shareholder chooses the same payment scheme as if the choice of the project would have been verifiable. The idea is that the manager has a tendency to choose safe (quiet-life behavior) and since the costs of choosing "safe"( $r$ ) are not very high she is not concerned about this restriction. Instead, if the opportunity cost is high enough the shareholder cannot opt for the same incentive scheme because the manager would implement a risky project. Therefore, the shareholder optimally empowers the incentive scheme by linking them to both the opportunity cost and the quiet-life behavior. By doing this the manager internalizes more the costs of choosing safe than the costs of selecting risky, which in turn imply that the manager opts for "safe". Let us summarize the optimal contract in the following lemma, where  $r_R(a) \equiv \frac{a + \rho\Delta\sigma^2}{2(1 + \rho\sigma_R^2)}$  and  $r_S(a) \equiv \frac{(1+a)(a + \rho\Delta\sigma^2)}{2(1 + a + \rho\sigma_S^2)}$  are both increasing in the manager's quiet-life parameter  $a$ .

**Lemma 2** *If the manager has discretion on both the effort and the firm's project, then:*

(a) *In order to implement  $P = R$ , the optimal incentive scheme is:*

$$\beta_R^* = \frac{1}{1 + \rho\sigma_R^2} \text{ if } r \geq r_R \text{ and } \beta_R = \frac{2r}{a + \rho\Delta\sigma^2} \text{ if } r < r_R$$

(b) *In order to implement  $P = S$ , the optimal incentive scheme is:*

$$\beta_S^* = \frac{1+a}{1+a+\rho\sigma_S^2} \text{ if } r \leq r_S \text{ and } \beta_S = \frac{2r}{a+\rho\Delta\sigma^2} \text{ if } r > r_S$$

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<sup>10</sup> Consider that the shareholder wants to implement risky but if  $\beta = \frac{1}{1 + \rho\sigma_R^2}$  then it might be the case that  $\beta r < \frac{\beta^2}{2}(a + \rho\Delta\sigma^2)$  for some parameters. Hence, if the shareholder lowers the incentives, the RHS lowers more than the LHS., which in turn imply that the manager selects risky again.



From Lemma 2 we learn which is the optimal payment scheme that the shareholder should implement when she wants to induce a given project and the corresponding level of effort. Yet, the shareholder wants to know which is the project that maximizes profits and this is attained by comparing the level of profits achieved when the shareholder induces the manager to implement the safe project and the profits obtained when she induces the manager to implement risky project. Let us represent graphically the constraint stated in Lemma 2 since we will find helpful for understanding the optimal decision.

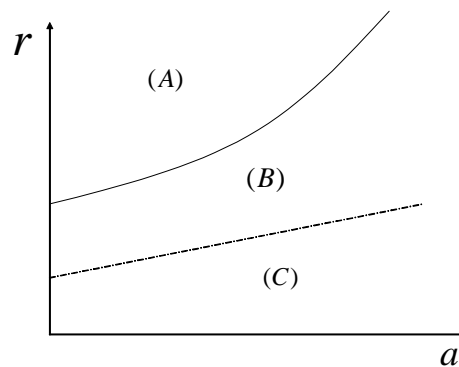


Fig 3: Implementation of both  
strategies through optimal  
incentive scheme

Figure 3 represents for every combination of parameters  $(r, a)$  which is the shape of the optimal contract when the shareholder implements either "safe" or "risky". To be precise, the dashed line represents part (a) of Lemma 2, i.e. the combination of parameters such that the shareholder is indifferent about the shape of the contract in order to implement "risky". Analogously, the continuous line represents part (b) of lemma 2 and determines which should be the shape of the contract if "safe" is the project to implement. Let us focus on the area (II) of the figure 3: in this area the shareholder can implement both risky and safe project by using the same incentives to the case where the project was verifiable. Yet, both in region (I) and (III) this is not the case anymore. For instance, in region (I) the shareholder can implement "risky" by using the optimal incentives obtained in Lemma 1 while we need to distort incentives with respect to Lemma 1 for implementing "safe".

A first intuition about the optimal decision regarding firm's project would suggest that

in the region (I) risky seems more appropriate since the opportunity costs of implementing safe are large. Analogously, in region (III) the shareholder would have a tendency to choose safe since the quiet-life behavior is large. Finally, in region (II) although it seems unclear, we are coming back to the case where the decision about the firm's project is verifiable where we have already defined where it is better to implement safe or risky. The following proposition analyzes the comparison of the optimal profits and defines the optimal decision regarding firm's project.

**Proposition 3** *When a quite-life manager has discretion both on the level of effort and on the firm's project, then*

- (a) *If  $r \geq \max\{r_1, r_R\}$ , the optimal payment scheme is  $\beta_R^*$  and "Risky" is selected.*
- (b) *if  $r \leq r_1$ , the optimal payment scheme is  $\beta_S^*$  and "Safe" is selected.*
- (c) *if  $r \in [r_1, r_R]$ , then there exists an  $\hat{r}(a)$  such that :*
  - c.1) *the optimal payment scheme is  $\beta_R = \frac{2r}{a+\rho\Delta\sigma^2}$  and "Risky" is chosen. This situation takes place if  $r > \hat{r}(a)$*
  - c.2) *the optimal payment scheme is  $\beta_S^*$  and "safe" is chosen. This situation takes place if  $r \leq \hat{r}(a)$ .*

As suggested in the initial intuition, the shareholder offers a contract that implements "Risky" for large opportunity cost (relative to the quiet-life behavior) as well as she offers a contract that implements "safe" whenever the opportunity cost (relative to the quiet-life behavior) is low enough. This is the situation stated in parts (a) and (b) of proposition 2, respectively. In other words, even if a "quiet-life" manager has also discretion on the choice of the project, these decisions are not distorted for this range of parameters. Moreover, the level of incentives provided to the manager is exactly the same to the case where project was verifiable (Lemma 2).

Nonetheless, part (c) of Proposition 3 determines the range of parameters where there exists distortions regarding firm's project when it was verifiable. From Proposition 1 we know that the shareholder would have selected the risky project in case the shareholder would be able to contract upon the project. Yet, this is not true anymore and the manager have a tendency (quiet-life) to choose the safe project. The shareholder tries to correct this behavior by lowering incentives (i.e.  $\beta_R = \frac{2r}{a+\rho\Delta\sigma^2} < \beta_R^*$  if  $r \in [r_1, r_R]$ ). However, lowering incentives has also an effect on the level of effort that the manager will achieve

in the next stage of the production process. Therefore, the shareholder find profitable to induce the manager to select "risky" only if the opportunity cost is high within this region ( $r > \hat{r}(a)$ ), while she prefers to induce the manager to select "safe" if the opposite takes place ( $r \leq \hat{r}(a)$ ). This corresponds to part c.1) and c.2) of Proposition 3, respectively.

Therefore, Proposition 3 states that if the manager has also discretion on the selection of the project, the shareholder has to implement "safe" in more situations (part c.2 of Prop.3) than in the case the manager has no discretion about this decision. Yet, we are concerned with the effect of such discretion in the managerial decision taking vis-a-vis the efficient decisions. We find that the discretion of a quiet-life manager regarding project's choice is not necessarily bad from the efficiency point of view, that is to say, this behavior may be a source of recovering efficient decisions (at a cost bear by the shareholder). The following corollary summarizes the comparison of the choice of the project when the manager has discretion over this decision and the efficient decisions,

**Corollary 1 ( of Proposition 3)** *When a quiet-life manager has discretion not only on effort but also on the choice of the project, it may be the case that*

(a) *"safe" is chosen when "risky" is efficient. This inefficient behavior is enlarged compared to the situation where the manager has no discretion on such decision. This situation takes place if the differences on variance between both project is low enough ( $\Delta\sigma^2 \geq \rho\sigma_S^2\sigma_R^2$ ).*

(b) *efficient decisions are recovered in some situations compared to the case where the manager has no discretion on such decision. This situation takes place if the differences on variance between both project is low enough ( $\Delta\sigma^2 < \rho\sigma_S^2\sigma_R^2$ ).*

Corollary 3 shows that an increase in manager's discretion when he is concerned about employees' preferences might be counterproductive but we find cases where this is not the case. Similarly to Proposition 3, the distortions are also induced by the difference on risk between both projects. If the differences on variances is high, a higher manager's discretion is clearly counterproductive since the manager has the tendency to choose safe even more since he has control on this decision. However, when the difference is low enough, the manager opts for "safe", which is the efficient decision, whereas if the manager has no discretion on such decision, the shareholder would offer a contract implementing "risky".

### 3.2.3 Discussion of the results

Consider the following situation: a manager has discretion about the selection of the projects and the implementation of it (the level of effort) and a regulator concerned with shareholder's welfare is planning to implement corporate governance mechanisms aiming at reducing manager's discretion regarding the selection of projects.<sup>11</sup> Our results state that even if this mechanism is available, we should not directly expect an increase in the efficient decision taking. The potential benefits derived from this policy are linked not only to the quiet-life behavior but also to the available alternatives that the firm has. In particular, assume that the safe project is the status quo project. If the firm is in a market/sector where the alternative project implies only a moderate increase in risk (we may think on mature sectors), then having manager's discretion on such decision might be better vis-a-vis a situation where this decision is contractible. To be precise, the efficiency depends on the value taken by the quiet-life behavior, and it is only efficiency enhancing when the quiet-life behavior is important relative to the risk-taking. As commented previously, a plausible interpretation of different values of the quiet-life parameter may be found in the institutional framework (Botero et al., 2004). Therefore, Anglo-Saxon countries should tend to reduce manager's discretion but that policy should not be applied always in Continental European countries or countries where the quiet-life parameter is important, as showed in Corollary 1. This policy should be promoted in markets/sectors where the alternative projects has a high risk (innovative projects) since a shareholder has the mechanisms to bear the risk (actually, we assume she is risk-neutral) while a risk-averse manager might have incentives to deter new efficient projects in order to gain on quiet-life.

## 4 Conclusion

This paper conveys the attention to a shareholder-manager relationship where the manager is aligned with employees' preferences. We model it by means of a principal-agent model. We assume that the manager is an agent having discretion not only on the im-

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<sup>11</sup>For instance, any Corporate Governance Code calls for an independent board in which the implementation of the strategy (in our model, the selection of projects) is a task that cannot be delegate to management.

plementation of the project but also on the selection of it. A quiet-life manager is not indifferent between different projects for two reasons: the manager is risk averse and employees put pressure on the manager for choosing the safest project among the available ones. Under this framework, we show that if the manager has discretion on both decisions and the quiet-life behavior is important, it might be better (in terms of choosing the right project) that the manager has discretion over both variables than a situation where the choice of the project is in hands of the shareholder. In other words, if improving corporate governance means reducing manager's discretion (as any Corporate Governance Code suggest), it may be the case that it generates distortions on the manager's decision taking. Therefore, if the regulator is concerned about efficiency the design of corporate governance rules should take into account this bias.

Under this framework, it is possible to obtain predictions regarding ownership structures or competition. Concerning ownership structures, it is fairly observed that while in Anglo-Saxon countries the main pattern is represented by a dispersed ownership, in Continental Europe concentrated ownership appears to be the main pattern (La Porta et al, 1999). When the shareholder need to hire a quiet-life manager in an environment where employees can influence managerial decisions, we should expect that the shareholder has incentives to participate more actively, i.e. monitor management through acquiring a large stake of the company. Regarding competition, we claim that the role of a quiet-life manager might have a positive effect when competing. In a nutshell, the choice of the project has an effect on the level of effort selected by the manager in the next stage and it also depends on the capacity of the employees to influence manager's decisions. Then, it might be the case that the manager can construct relationships with employees (Allen and Gale, 2000). A firm that has to compete in these environments may be able to build a competitive advantage with regard to a firm where the manager faces a lower influence from employees. This potential competitive advantage may arise if different firms compete in a new emerging market where the labour market is protected.

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## A Appendix

**Proof of Lemma 1.** Part (a) of Lemma 1 is obtained by solving the following program:

$$\begin{aligned} & \underset{\{\alpha, \beta, e\}}{\text{Max}} (1 - \beta)e_R - \alpha \\ \text{s.t.} \quad & \alpha + \beta e - \frac{\rho}{2}\beta^2\sigma_R^2 - \frac{e^2}{2} \geq \underline{U}, \quad e_R = \beta \end{aligned}$$

The lagrangian of this program taking into account that  $e_R = \beta$  is

$$L(\alpha, \beta; \lambda) = (1 - \beta)\beta - \alpha + \lambda[\alpha + \frac{\beta^2}{2}(1 - \rho\sigma_R^2) - \underline{U}]$$

Hence, looking for FOC, we get that

$$\frac{\partial L(\alpha, \beta; \lambda)}{\partial \alpha} = 0 \iff \lambda = 1 \text{ and } \frac{\partial L(\alpha, \beta; \lambda)}{\partial \beta} = 0 \iff \beta^* = \frac{1}{1 + \rho\sigma_R^2}$$

which in turn imply that  $CE_{P=R} = \underline{U}$  since  $\lambda = 1$ .

Finally, profits are obtained by plugging the optimal contract in the objective function.

Formally,

$$B_{P=R} = (1 - \beta^*)e_R^* - \alpha = (1 - \beta^*)\beta^* + \frac{\beta^{*2}}{2}(1 - \rho\sigma_R^2) - \underline{U} = \frac{1}{2(1 + \rho\sigma_R^2)} - \underline{U} = \frac{\beta^*}{2} - \underline{U}$$

In a similar vein, part (b) of Lemma 2 is obtained by solving

$$\begin{aligned} & \underset{\{\alpha, \beta, e\}}{\text{Max}} (1 - \beta)(e_S - r) - \alpha \\ \text{s.t.} \quad & \alpha + \beta(e_S - r) - \frac{\rho}{2}\beta^2\sigma_S^2 - \frac{e_S^2}{2(1 + a)} \geq \underline{U}, \quad e_S = \beta(1 + a) \end{aligned}$$

The Lagrangian of this program taking into account that  $e_S = \beta(1 + a)$  is

$$L(\alpha, \beta; \lambda) = (1 - \beta)(\beta(1 + a) - r) - \alpha + \lambda[\alpha + \frac{\beta^2}{2}(1 + a - \rho\sigma_S^2) - \underline{U}]$$

Hence, looking for FOC, we get that

$$\frac{\partial L(\alpha, \beta; \lambda)}{\partial \alpha} = 0 \iff \lambda = 1 \text{ and } \frac{\partial L(\alpha, \beta; \lambda)}{\partial \beta} = 0 \iff \beta^* = \frac{1 + a}{1 + a + \rho\sigma_S^2}$$

and profits are obtained by plugging the optimal contract in the objective function, which in turn imply that

$$\begin{aligned} B_{P=S} &= (1 - \beta^*)(e_S - r) - \alpha = (1 - \beta^*)\beta^*(1 + a) + \frac{\beta^{*2}}{2}(1 + a - \rho\sigma_S^2) - \underline{U} \\ &= \frac{(1 + a)^2}{2(1 + \rho\sigma_R^2)} - r - \underline{U} = \frac{\beta^*(1 + a)}{2} - r - \underline{U} \end{aligned}$$

■

**Proof of Proposition 1.** It follows straightforward by comparing the level of profits obtained when the project is risky and when it is safe. ■

**Proof of Proposition 2.** Before proving this proposition, let us analyze the properties of  $r_1(a)$  and  $r_{FB}(a)$ . It is easy to check that  $r_1(a)$  is increasing and (strictly) convex with  $r_1(0) > 0$ , while  $r_{FB}(a)$  is increasing and linear with  $r_{FB}(0) = 0$ .

Finally, there exists only one  $a = \frac{\Delta\sigma^2}{\rho\sigma_S^2\sigma_R^2 - \Delta\sigma^2}$ , if exists such that  $r_1(a) = r_{FB}(a)$ . This is so since  $\lim_{a \rightarrow \infty} \frac{\partial r_1(a)}{\partial a} = \lim_{a \rightarrow \infty} \frac{\partial r_{FB}(a)}{\partial a} = \frac{1}{2}$ .

In order to prove this proposition, recall that in case of efficient decisions, it is efficient to choose risky if  $r > r_{FB}(a)$  and safe if the opposite is true. Then if  $\Delta\sigma^2 \geq \rho\sigma_S^2\sigma_R^2$  part (a) is obtained directly since for all  $a$ ,  $r_1(a) = \frac{(1+a)^2}{(1+a+\rho\sigma_S^2)} - \frac{1}{1+\rho\sigma_R^2} > \frac{a}{2} = r_{FB}(a)$ , which in turn imply that if  $r < r_1$  the shareholder will choose safe while risky is efficient at least for some opportunity cost  $r$ .

Part (b) is obtained if  $\Delta\sigma^2 < \rho\sigma_S^2\sigma_R^2$  since there exist only one  $a = \frac{\Delta\sigma^2}{\rho\sigma_S^2\sigma_R^2 - \Delta\sigma^2}$  such that  $r_1 = \frac{a}{2}$ . Parts b.1) and b.2) are obtained by noting that  $r_{FB}(a)$  is linear while  $r_1(a)$  is convex and  $r_1(a=0) > r_{FB}(a=0) = 0$ . ■

**Proof of Lemma 2.** Before proving this lemma, it is clear that the [PC] is binding since the fix part  $\alpha$  is subtracting in the objective function and therefore the shareholder wants to make it as small as possible. Hence, part (a) of Lemma 2 is obtained by solving

$$\begin{aligned} \underset{\{\alpha, \beta\}}{\text{Max}} & (1 - \beta)\beta + \frac{\beta^2}{2}(1 - \rho\sigma_R^2) - \underline{U} \\ \text{s.t.} & \quad \beta r \geq \frac{\beta^2}{2}(a + \rho\Delta\sigma^2), \end{aligned}$$

And from FOC and K-T conditions we derive:

$$\beta = \frac{1 - \mu}{1 + \rho\sigma_R^2}, \mu(\beta r \geq \frac{\beta^2}{2}(a + \rho\Delta\sigma^2)) = 0 \text{ and } \mu \geq 0$$

where  $\mu$  is the K-T multiplier associated to the incentives constraints. Therefore if  $\mu = 0$ , we get  $\beta = \frac{1}{1 + \rho\sigma_R^2}$  and  $\beta r - \frac{\beta^2}{2}(a + \rho\Delta\sigma^2) > 0 \iff \beta > \frac{2r}{a + \rho\Delta\sigma^2}$  which implies that it happens if  $r \geq r_R$ . Hence, if  $r < r_S$ , then  $\beta = \frac{2r}{a + \rho\sigma_R^2}$  since  $\mu > 0$ . This corresponds to part (a). Part (b) is obtained by solving the analogous program for project safe. Formally,

$$\underset{\{\alpha, \beta\}}{\text{Max}} (1 - \beta)(\beta(1 + a) - r) + \frac{\beta^2}{2}(1 + a - \rho\sigma_R^2) - \underline{U}$$



$$s.t \quad \beta r \leq \frac{\beta^2}{2}(a + \rho\Delta\sigma^2),$$

And from FOC and K-T conditions we derive:

$$\beta = \frac{1 + a - \mu}{1 + a + \rho\sigma_R^2}, \quad \mu\left(\frac{\beta^2}{2}(a + \rho\Delta\sigma^2) - \beta r\right) = 0 \text{ and } \mu \geq 0$$

where  $\mu$  is the K-T multiplier associated to the incentives constraints. Therefore if  $\mu = 0$ , we get  $\beta = \frac{1+a-\mu}{1+a+\rho\sigma_R^2}$  and  $\beta r - \frac{\beta^2}{2}(a + \rho\Delta\sigma^2) < 0 \iff \beta < \frac{2r}{a+\rho\Delta\sigma^2}$  which implies that it happens if  $r \leq r_S$ . Hence, if  $r > r_S$ , then  $\beta = \frac{2r}{a+\rho\sigma_R^2}$  since  $\mu > 0$ . ■

**Proof of Proposition 3.** From Proposition 1 if  $r < r_1$  safe is preferred to risky. From Lemma 2 if  $r < r_R$  the optimal incentive is  $\beta = \frac{2r}{a+\rho\Delta\sigma^2}$  which implies that profits cannot be larger than profits achieved with  $\beta = \frac{1}{1+\rho\sigma_R^2}$ . In other words,  $B_S(\frac{1+a}{1+a+\rho\sigma_S^2}) \geq B_R(\frac{1}{1+\rho\sigma_R^2})$  whenever  $r < r_1$  and since  $r < r_r$ , it implies  $B_R(\frac{1}{1+\rho\sigma_R^2}) \geq B_R(\frac{2r}{a+\rho\Delta\sigma^2})$ . Therefore, this proves part (b).

Similar to this, if  $r > r_R$  and  $r < r_1$ , the optimal decision is to implement safe by applying the same argument than part (b). This corresponds to part (a).

In order to prove part (c), we need to realize that the following is true: at  $r = r_R$  the shareholder is indifferent between choosing  $\beta = \frac{2r}{a+\rho\sigma_R^2}$  and  $\beta = \frac{1}{1+\rho\sigma_R^2}$  in order to implement risky. Then since  $r_1 < r_R$ ; it implies that at  $r = r_R$   $B_R \geq B_S$ . Similarly at  $r = r_1$   $B_R \geq B_S$ , since by definition at  $r = r_1$   $B_R(\frac{1}{1+\rho\sigma_R^2}) = B_S(\frac{1+a}{1+a+\rho\sigma_S^2})$ , but since  $r < r_R$  this implies  $B_R(\frac{1}{1+\rho\sigma_R^2}) \geq B_R(\frac{2r}{a+\rho\Delta\sigma^2})$ . Finally, to prove part (c) we only need to check that there exists such  $\hat{r}(a)$ . Note that for all  $a$  in this set,  $\frac{\partial B_R}{\partial r} > 0$  and  $\frac{\partial B_S}{\partial r} < 0$ . Thus, there exists an  $\hat{r}(a)$  such that if  $r > \hat{r}(a)$  then  $B_R > B_S$ , while if the opposite takes place,  $B_R < B_S$ . ■

**Proof of Corollary 1.** The proof is analogous to the proof of Proposition 2. The only difference arises in the region corresponding to Part (c) of Proposition 3. If risk is low  $r_1 = r_{FB}$  and we may have improved choices since now  $P = S$  is selected more often. Otherwise, there is an increase in the inefficiency. ■